K. AKAGAWA, S. TAKIGAWA, I. S. NAGAMINE, R. UMEZAWA, K. KUDO\* (UNIVERSITY OF TOKYO, JAPAN)

Peptide-Catalyzed Diastereo- and Enantioselective Cyclopropanation of Aromatic  $\alpha,\beta$ -Unsaturated Aldehydes *Org. Lett.* **2013**, *15*, 4964–4967.

## Cyclopropanation of $\alpha,\beta$ -Unsaturated Aldehydes with a Supported Peptide

**Significance:** The amphiphilic resin-supported peptide **1** catalyzed the diastereo- and enantiose-lective cyclopropanation of aromatic  $\alpha,\beta$ -unsaturated aldehydes **2** with dimethylphenacylsulfonium bromide in the presence of NaHCO $_3$  to give the corresponding cyclopropanes **3** in 83–88% yield with 98–99% ee and 92–97% diastereoselectivity (9 examples, eq. 1). In the formation of **3g**, the catalyst was recovered by filtration and reused five times without significant loss of its catalytic performance (1st reuse: 87% yield, 99% ee, 94% diastereoselectivity; 5th reuse: 83% yield, 99% ee, 95% diastereoselectivity).

**Comment:** The authors have previously reported the preparation of a series of amphiphilic resinsupported peptides and their application to asymmetric hydrogenation (*Org. Lett.* **2008**, *10*, 2035), asymmetric Friedel–Crafts-type alkylation (*Adv. Synth. Catal.* **2012**, *354*, 1280) and asymmetric Michael addition (*Angew. Chem. Int. Ed.* **2012**, *51*, 12786).

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Category

Polymer-Supported Synthesis

**Key words** 

resin-supported peptides

asymmetric cyclopropanation

α,β-unsaturated aldehydes